

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. **(Currently Amended)** Method A method of delivering data from a data input to a data output within a system, comprising

 selecting a system performance parameter to be optimized in a system that allows data to be delivered in at least three different modes,

 receiving at the data input a sequence of discrete data words,

 determining an optimum mode of delivery of the data words to the data output so as to optimize the selected performance parameter, and

 delivering the data words from the data input to the data output in the determined optimum mode, wherein:

 when the selected performance parameter to be optimized is latency, the optimum mode comprises delivering each data word immediately after the data word is received at the data input;

 when the selected performance parameter to be optimized is bandwidth, the optimum mode comprises holding at least one of the data words first received at the data input in storage until additional data words comprising the data packet are received at the data input, delivering the data words from storage to the data output as the additional data words comprising the data packet are received at the data input with minimal time gaps between the data words, and delivering the additional data words directly from the data

input to the data output immediately after the additional data words are received at the data input; and

when the performance parameter to be optimized is safety, the optimum mode comprises holding each of the data words received in storage until all data words comprising the data packet have been received, and delivering the data words from storage to the data output with no time gaps between the data words.

2. Canceled

3. **(Currently Amended)** ~~Method~~ The method according to claim 1, further comprising reordering the data words into a desired sequence before delivering the data words from the data input to the data output.

4. **(Currently Amended)** ~~Method~~ A method of delivering data from a data input to a data output within a system, comprising

selecting a system performance parameter to be optimized in a system that allows data to be delivered in at least three different modes,

receiving at the data input a sequence of discrete data words,

selecting a desired sequence of the data words; and

delivering the data words from the data input to the data output in the determined optimum sequence and time, wherein:

when the selected performance parameter to be optimized is latency, the optimum mode comprises delivering each data word in the desired sequence immediately after the data word is received at the data input;

when the selected performance parameter to be optimized is bandwidth, the optimum mode comprises holding at least one of the data words first received at the data input in storage until additional data words comprising the data packet are received at the data input, delivering the data words in the desired sequence from storage to the data output as the additional data words comprising the data packet are received at the data input with minimal time gaps between the data words, and delivering the additional data words in the desired sequence immediately after the additional data words are received at the data input; and

when the performance parameter to be optimized is safety, the optimum mode comprises holding each of the data words received in storage until all data words comprising the data packet have been received, and delivering the data words from storage to the data output in the desired sequence with no time gaps between the data words.

5-10. Canceled

11. **(Currently Amended)** Method A method of delivering data from a data input to a data output within a data processing system that allows data to be delivered in at least three different modes on each of a plurality of multiplexed data channels, comprising selecting a system performance parameter to be optimized for each channel,

receiving at the data input of each channel a sequence of discrete data words,
determining an optimum mode of delivery of the data words to the data output so as to
optimize the selected performance parameter for the associated channel, and
delivering the data words from the data input to the data output in the determined
optimum mode for each channel, wherein:

when the selected performance parameter to be optimized is latency, the optimum
mode comprises delivering each data word immediately after the data word is received at
the data input;

when the selected performance parameter to be optimized is bandwidth, the
optimum mode comprises holding at least one of the data words first received at the data
input in storage until additional data words comprising the data packet are received at the
data input, delivering the data words from storage to the data output as the additional data
words comprising the data packet are received at the data input with minimal time gaps
between the data words, and delivering the additional data words directly from the data
input to the data output immediately after the additional data words are received at the
data input; and

when the performance parameter to be optimized is safety, the optimum mode
comprises holding each of the data words received in storage until all data words
comprising the data packet have been received, and delivering the data words from
storage to the data output with no time gaps between the data words.

12. **(Currently Amended)** Method The method according to claim 11, wherein the
mode of delivery is different for at least two of the plurality of data channels.

13. **(Currently Amended)** Method A method of delivering data from a plurality of data sources from a data input to a data output within a data processing system that allows data to be delivered in at least three different modes for each data source, the method comprising

- selecting a system performance parameter to be optimized for each source,
- receiving at the data input a sequence of discrete data words in transit to the data output from each source,
- determining an optimum mode of delivery of the data words to the data output so as to optimize the selected performance parameter for the associated source, and
- delivering the data words from the data input to the data output in the determined optimum mode for each source, wherein:

- when the selected performance parameter to be optimized is latency, the optimum mode comprises delivering each data word immediately after the data word is received at the data input;

- when the selected performance parameter to be optimized is bandwidth, the optimum mode comprises holding at least one of the data words first received at the data input in storage until additional data words comprising the data packet are received at the data input, delivering the data words from storage to the data output as the additional data words comprising the data packet are received at the data input with minimal time gaps between the data words, and delivering the additional data words directly from the data input to the data output immediately after the additional data words are received at the data input; and

when the performance parameter to be optimized is safety, the optimum mode comprises holding each of the data words received in storage until all data words comprising the data packet have been received, and delivering the data words from storage to the data output with no time gaps between the data words.

14. **(Currently Amended)** ~~Method~~ The method according to claim 13, wherein the mode of delivery is different for at least two of the plurality of data sources.

15-19. Canceled

20. **(Currently Amended)** ~~Apparatus~~ An apparatus for delivering data from a data input to a data output within a system using the method of claim 1, comprising:

a data input for receiving a sequence of discrete data words from a plurality of data sources including a link input having unpredictable data arrival times and a memory having predictable data arrival times;

a data output to which data are delivered; and

at least one data storage element intermediate the data input and data output for storing individual data words in transit from the data input to the data output for a determined time before delivery to the data output, and at least one path for selectably delivering data to the data output by bypassing said data storage element.

21. Canceled